A CORRELATIONAL ANALYSIS OF THE RELATION BETWEEN THE CATHOLIC COMPOSITION OF A POPULATION AND ITS BIRTH RATE

BY

BERNARD GEORGE MULVANEY

A.B., St. Viator College, 1930

A.M., Catholic University of America, 1934

Lic. en Sci. Pol. et Soc., Louvain University, 1938

AN ABSTRACT OF A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN SOCIOLOGY IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS, 1941

URBANA, ILLINOIS

1941

A CORRELATIONAL ANALYSIS OF THE RELATION BETWEEN THE CATHOLIC COMPOSITION OF A POPULATION AND ITS BIRTH RATE

BY

BERNARD GEORGE MULVANEY

A.B., St. Viator College, 1930

A.M., Catholic University of America, 1934

Lic. en Sci. Pol. et Soc., Louvain University, 1938

AN ABSTRACT OF A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN SOCIOLOGY IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS, 1941

URBANA, ILLINOIS

1941

Digitized by the Internet Archive
in 2026

https://archive.org/details/IA41549818_0041

1. The Problem and Our Method

This study is an attempt to find the correlation between the geographic distribution of two phenomena, viz.,

1) adjusted birth rates, and

2) the proportion of Catholics in the population.

The second phenomenon we shall refer to as "Catholicity". Thus we shall not use the term in its more generally accepted meanings, such as liberality of sentiments or universality.

It is debated whether there is an association between birth rates and Catholicity. Many phenomenon are associated with fertility trends, and of these some have been given indices that are correlated with the birth rate. In this sense, the latter phenomena are called "factors". We shall attempt to see whether the proportion of Catholics in a population is such a factor.

The problem, then, is to hold constant as many items as possible in order to see the correlation between birth rates and Catholicity. But some of the phenomena associated with fertility trends are not known, and of those known, not all admit of apt statistical treatment. On the other hand, there is a wealth of material available in modern censuses that can be used to analyze and hold constant many factors of fertility. In our use of this material, we make assumptions; we presume that the phenomena associated with fertility are reducible to factors which are not necessarily inter-related and that the more important factors admit of some statistical treatment. Thus we attempt to deal with phenomena associated with fertility in terms of mathematical indices. By using these indices, in turn, as variables in correlation systems, we are able to hold constant some of the factors which may hide the possible correlation between birth rates and Catholicity.

To obtain the indices, we first isolate a group whose fertility differs from that of other groups. That characteristic whereby the group is identified is the item to be given numerical expression. When such an index is clearly and consistently correlated with the birth rate, it indicates a "factor". We are not concerned with explaining why this factor influences fertility, but rather with seeing how its index is associated with the birth rate.

In the event that the factoral element is not clearly identified,

or that its purported indices do not consistently vary with the birth rate, it is classified as "doubtful"; but it is still considered. We may vary the construction of the index until we find the that seems best correlated with the birth rate, but we lack assurance that the final index is completely refined. This difficulty is met particularly with regard to cultural items, such as education or economic status; here we are compelled to adopt the best indices available. Again, some factors may not yield to our method of identification merely because they are jointly associated with fertility. Accordingly, we treat only those items to which we can give indices; we may overlook some factors, and others may have unsatisfactory indices.

The most refined of our indices, moreover, are not free from possible error. When we say, for example, that there is a certain percentage of foreign born in a population, we imply that every part of that population is characterized by this percentage of foreign born; as a matter of fact, the foreign born may belong to restricted parts of the whole population. Again, with regard to birth rates, we presume that fecundity is a constant; similar assumptions must be made with reference to particular indices, assumptions necessary because of lack of data.

Because of the possibility of error in such assumptions, and because we have to deal with "doubtful" factors, it was decided to work out several systems of correlations. Each system has a limited number of variables, so that the cumulative force of the errors in any one of them is controlled. On the other hand, this limitation of variables is apt to lower the multiple correlation. Hence each system is worked out with primary reference to the better-known and important factors; the treatment of "doubtful" factors has been distributed among the several systems of correlations. In this way, the multiple correlation retains some value as an indicator of success in treating factors properly.

Of the factors which we shall consider, that of urbanization is generally recognized as one of the most important. In view of this, the national studies we take up are supplemented with city studies; in these latter, only cities of a uniform size are treated, so that the factor of urbanization is held constant directly. Care must be taken in viewing these cities as samples of the whole or national population.

Lack of data has restricted our choice of countries to be studied. With regard to Catholicity, few countries report re-

liable figures. Of those reporting, we select those countries where Catholicity varies from one internal area to another, in order to have sufficient variability in Catholicity. At the outset, then, we are limited to the United States, Canada, Poland, Germany, Switzerland and Holland. But of these countries, few give adequate data, on items other than Catholicity, for a sufficient number of competent areas to permit obtaining valid correlations. Because the United States and Germany give the most usable data for the construction of the indices we need, these countries have been chosen for investigation. Even for these countries, however, there are many gaps in the data; but there is a wealth of information in their censuses which can be used with some assurance of success in holding factors constant, in order to see the net correlation between birth rates and Catholicity.

For the United States, the prevailing opinion seems to be that there has been a correlation between birth rates and Catholicity, but it is doubted whether this correlation obtained as late as 1930. With regard to Germany, it is debated whether the apparent correlation between birth rates and Catholicity maintains when factors are held constant. Ours, we believe, is the first attempt to treat the data for these countries on a nation-wide scale.

In sum, this study is an attempt to test the geographical correlation between birth rates and the proportion of Catholics in the populations of the United States and Germany. Of the various factors associated with fertility, we try to hold constant those admitting of statistical treatment. In other words, we try to utilize the statistical material furnished in modern censuses to ascertain whether there is a correlation between birth rates and Catholicity.

2. The American and German Studies Explained

United States Studies

There are four systems of correlations for the United States data. Two of these have large cities as units, and two have states as units. The city studies differ mainly in the number of cities used as units; the state studies differ mainly in the types of indices they employ. The First City Study covers 21 of the 24 cities in the 300,000-and-over class, or almost a fourth of the national population. The First State Study takes in 46 states,

or 95% of the population. These "First" studies were made before the "Second" studies, so the latter have more refined indices. The Second City Study deals with 75 of the 92 cities of the 100,000-and-over class, covering 86% of their population, or 25% of the nation. The Second State Study has 43 states and the District of Columbia as units, and it covers 90% of the population. The First City Study is made as of 1926, the other three studies are made with 1930 data.

Since the census limits of cities do not always correspond with the total urban areas, data given for cities are generally less reliable than those given for states. Again, since births were often reported for place of birth rather residence of parents, birth rates of cities are spuriously high. On the other hand, parish lines, used to determine the number of Catholics, did not conform with census or real limits of cities, so that there is more possibility of error in the city figures for Catholicity than in the state figures.

The factor analysis for the United States is made difficult by the inaccuracies in birth recordings; usually births are under-enumerated. In the Second State Study an attempt is made to allow for this error in birth statistics by adding 5% to white births and 15% to negro births. This procedure, however, did not facilitate the factor analysis, and the eventual results suggest that the correlation was too broad.

With regard to Catholicity in the United States, the figures available have many defects. The under-enumeration of Catholics is too little understood to allow for a correction, so there is error in the index. We have not been able to estimate the net effect of this error on the ultimate correlations between birth rates and Catholicity.

Though in each successive study,—First City and State, Second City and State,—the indices are more refined, little can be done to improve those of fertility and Catholicity. But because the other indices are most refined in the Second State Study, this study is the most significant. Still it has errors, and its results should not be viewed apart from those of the other studies.

German Studies

For Germany, two systems of correlations are worked out.

One deals with cities, and the other with regions which we call "states". The City Study covers all cities of the 100,000-and-over class; there are 52 of such cities, and they contain a third of the national population. The State Study, dealing with the entire German population, has 30 units for correlations. Both studies cover 1933 data.

For Germany, as of the census date (June 16, 1933), an unusual factor is present. This is the Nazi program for raising fertility. Since we could not devise a single index for treating this factor, we attempt to stabilize it by indirect means. We observe the way in which the usual factors have been modified, and attempt to correct their indices for this modification.

Such corrections require that close attention be paid to the age and sex composition of the population. Due to lack of data, this is difficult in the City Study. Generally, fewer data are given for cities than for states, so that with regard to all indices the City Study has less accuracy than the State Study. Again, since census and total urban areas do not always coincide, city data are faulty.

Since we must correct the German indices for the Nazi influence and the age and sex composition of the population, fewer factors are treated in the German studies than in the American studies. Again, for the period of our investigation, the United States birth rates are less reliable than those of Germany; in turn, indices for the factors are less accurate in the American studies than in the German studies. We did the American studies first, and those factors that there seemed more important were given special attention in the German studies. Then, since the German census offers more pertinent data for testing factoral indices than the American census, the German indices are the more refined of the two. In this respect, the American studies are less accurate than the German studies, despite the fact that they seem to treat more factors. In both countries, however, less data are available for city indices than for state indices, so that the city studies are less accurate than the state studies. Of all studies, the German State Study has the most refined indices; in this measure, it is the most significant of the several studies.

3. Summary of the American and German Studies

(From Part IV of Thesis)

"Catholicity" for the United States studies is calculated from estimates of the number of Catholics; in the German studies, Catholicity is calculated from enumerations of the number of Catholics. In the American studies, "Catholicity" means the percentage of Catholics in the total population, an index based on crude estimations. In the German studies, "Catholicity" means the ratio between the number of Catholic women and the number of women in reproductive ages. In both countries, other indices, such as the proportion of Catholic families, parents, wives, and husbands, could have been used; it may be that with such indices other results than ours would have been obtained. But for Germany, our index varies in much the same way as the ratio between the number of Catholics and the number in the total population. Had we used the German index in the United States Studies, perhaps the American results would have been similar to ours; we lack data to test this.

For the United States and Germany, raw correlations between birth rates and Catholicity vary; factors must be held constant. But the factors are many, and not too well understood. With crude factoral indices, despite the number of factors treated, low multiple correlations are obtained; this would seem to indicate that with poor indices, factors are not held constant. In the American and German studies, the factor arrays are similar, but the indices are often different. "Marital Status", "Occupational Status", "Urbanization" and "Women Employed" appear in the studies of both countries; while in the United States we consider "Ethnic Differences", in Germany we adjust indices for the modification of factors brought about at the time of the Nazi rise to power. In neither country did "Economic Status" receive satisfactory treatment.

The following table is a summary of the results of the calculations. The sampling errors are given in terms of Probable Errors; these were obtained with the use of a crude formula, so in the case of the United States First City Survey, and in the case of all multiple and partialled correlations, the indicated Probable Errors are too low. In view of the results, however, refinements of the Probable Errors are not called for.

CORRELATIONS OBTAINED IN THE UNITED STATES AND THE GERMAN STUDIES

Studies	Number of Units	Factors	Indices	Correlation Coefficients Multiple	k	Catholicity—Birth Rate Raw	Partialled
United States Studies:							
First City (300,000+)	23	8	9	.87±.03	.48	+.60±.10	+.30±.12
First State	46	7	10	.61±.06	.79	—.13±.10	+.44±.08
Second City (100,000+)	75	7	8	.57±.05	.82	+.29±.07	+.16±.08
Second State	44	5	10	.90±.02	.43	—.46±.08	—.24±.09
German Studies:							
City (100,000+)	52	5	6	.75±.04	.67	+.36±.08	+.41±.08
State	30	5	9	.94±.10	.34	+.42±.10	+.81±.04

In the two countries, the net correlations between birth rates and Catholicity are somewhat uniform. In the German studies, this uniformity lies in positive correlations; in the American studies, it lies in insignificant correlations. Three explanations might be brought forward to account for the low correlations obtained in the American studies. The American birth and Catholicity figures may be too faulty; there may be inadequate treatment or factors; or there may not be a relationship between birth rates and Catholicity.

First, in view of errors in the indices for fertility and Catholicity, it is to be expected that the correlations of the American studies be affected. Though there may be large systematic errors in both indices, there are also random errors, the result of which, if uncorrelated with true indices, is to lower correlations. In Germany, the random errors are less, the lowering of the correlations also less. Thus if there be a relationship between birth rates and Catholicity, it is expected to be reflected less adequately in the American results than in the German results.

Secondly, the United States studies treat more factors than the German studies; but, because of faults in birth statistics, factors are less easily identified in the United States than in Germany. Generally, then, indices are less accurate for the United States than for Germany. Now of the American studies, that entitled "Second State Study" apparently has the best indices, and its multiple correlation is highest, being .90. This compares with .94 obtained in the German State Study. But with Catholicity omitted from the factor array, these figures become .89 and .82 respectively. Apparently extraneous factors

are treated as well in the United States Second State Study as in the German State Study. While omitted factors could influence the net correlation between birth rates and Catholicity either way, the multiple correlations of the two studies seem to indicate that omitted factors are not of major importance.

In the third place, our correlations for the United States may reflect what is present, a lack of relationship between birth rates and Catholicity. But while the American Second State Study handles factors as well as the German State Study, still the multiple correlation is lower when Catholicity is taken into account in the United States Study. There is hardly a significant difference, it is true, between the two multiple correlations, but perhaps the difference is due to improper treatment of some factor, such as Catholicity. A presumption in favor of this possibility is suggested in the fact that the partialling of extraneous factors generally tends to make the net correlations between birth rates and Catholicity more positive (except in the Second City Study, where a low multiple correlation is obtained.)

Thus in the United States studies, the indices are less accurate than in the German studies, so that the correlations may be spuriously lower. In turn, net correlations, though statistically insignificant, tend to be more positive than raw correlations (except in the Second City Study). Finally, the studies with the best indices, German and American, have multiple correlations which suggest that in the American data some factor, perhaps Catholicity, receives inadequate attention.

4. A Correlation Between Birth Rates and Catholicity in the Light of Current Population Views

The present study is not concerned with definite interpretation of the correlations found. Such interpretation would call for the consideration of data, the use of methods and accumulalation of evidence which have not been undertaken. Nevertheless, it is of interest to relate our findings to various current population theories and views. This latter discussion may suggest to the reader much needed research, including projects involving consideration of the more cultural aspects of the problem.

If there were a correlation between birth rates and Catholicity, what would it mean? Such a correlation can be inter-

preted in two ways. It may mean that where births are few, Catholics are few, or it may mean that where births are many, Catholics are many. Today the latter explanation seems to be preferred, and the central problem seems to be that of explaning why Catholicity encourages a relatively high birth rate. In fact, it seems clear that Catholicity is associated with failure of Catholic fertility to decline as fast as that of the rest of the population; the problem then reduces itself to an explanation of what in Catholicity wards off, temporarily at least, decline of fertility.

One type of explanation emphasizes the influence of the teachings of the Church. The authors point out that these teachings are such that they encourage all who come in contact with them to be more fertile than others. But two groups interpret this alleged influence differently. One group, the older, holds that the totality of the Church's teachings produce a frame of mind that affects fertility. The latter explanation is that particular teachings of the Church, those having to do with the condemnation of certain means of birth restriction, cause the fertility of the Church's adherents to differ from that of others. In one case, the total teachings, rather than any ones in particular, are emphasized; in the other case, particular teachings receive emphasis. In either case, those influenced by the teachings of the Church are expected to have a fertility higher than that of others. In the light of such a theory, a correlation between birth rates and Catholicity would seem to indicate that the teachings of the Church really are effective. It matters little whether the influence of the Church be direct or indirect, whether it is embodied in particular teachings which limit the means of birth restriction or in the general body of teachings which affect attitudes bearing on fertility. The correlation would be brought forward as evidence that Catholic teachings influence fertility.

From the economic point of view, there is no generally accepted theory of differential fertility. Perhaps the most-favored notion is that generally the wider the gap between desired and obtained satisfactions, the lower will be fertility. In the light of this theory, the correlation between birth rates and Catholicity would seem to indicate that Catholics are favored by either wanting less or by obtaining more than others. According to another view, occupation determines classes in society; in turn, the highest class sets the pattern for family restriction. The fertility of other classes declines as they are brought in contact

with the patterns of the upper class, and as they shake off their old patterns. In modern times, inter-class contact has facilitated the spread of the patterns of family restriction, so that fertility has declined generally. This theory is typical of modern economic explanations of differential fertility and of the birth decline in that it leans upon sociological premises. But according to this view, the correlation between birth rates and Catholicity would seem to indicate that Catholics either have less contact with the pattern of family restriction of the upper classes, or that they are slower than others in throwing off old patterns.

Among the biological explanations of differential fertility, Gini's has widest acceptance. According to this view, each nation has a cyclical rise and fall of fecundity; the fall is brought about by the lack of virility in modern society, i.e. its preference for comfort, security and white-collar pursuits. Hence a correlation between birth rates and Catholicity would seem to indicate that Catholics are less affected by the cyclical fall than others; they are exempted from the influence of factors lowering fecundity generally, perhaps in virtue of their policy of marrying amongst themselves, or because of some form of seclusiveness that they observe.

There are many other theories to explain differential fertility. Among them is found one which we call that of the "Prudential Factor". According to this view, wherever society leaves to individuals completely the decision about progeny, fertility declines. Heretofore society has bound together questions of sex and offspring, but in recent times, society has come to separate the issues and leave to individuals the regulation of both matters. The result has been a smaller number of children than heretofore, and in turn social approval of small families. In other words, society has recognized the pattern of birth restriction, and the result has been birth restriction. In the light of this view, a correlation between birth rates and Catholicity would seem to indicate that Catholics submit more to the traditional controls than others do. But why they do is not known.

Thus we could interpret a correlation between birth rates and Catholicity in many ways. Until more is known about the attitudes affecting fertility, about the cultural background into which modern fertility attitudes fit, no definite interpretation can be made. It is hoped that future investigations will throw light upon the extent and causes of differential fertility.

APPENDIX

INDICES USED IN THE RESPECTIVE STUDIES

A. UNITED STATES STUDIES

1. *First City Study* (300,000 and over)*

(1) Crude birth rate

Births, (1926)—*Birth, Stillbirth, and Infant Mortality Statistics*: 1926, 1929, Table I.

Population (1926)—Calculated from *Composition and Characteristics of the Population,* 1931, p. 61.

(2) % Reproductive Women

Calculated from, Women (15-44 incl.)—at 1920—*Population,* 14th Census, Vol. II, 1923, pp. 288-361.

—at 1930,—*Population,* 15th Census, Vo. II, 1931, pp. 725-795.

Total population, ut supra.

(3) % Women Married (10 and over),—calculated from *Composition and Characteristics of the Population,* 1931, p. 70. Total population, ut supra.

(4) % Women (10 and over) Employed,—*Comp. and Char.,* ut supra, p. 73.

(5) % Foreign-born,—calculated from *Comp. and Char.,* ut supra, p. 63.

(6) % Negro,—calculated from *Comp. and Char.,* ut supra, p. 61.

(7) Education,—% attending school aged 16-17 plus % attending school aged 18-20, in 1920.—*Comp. and Char.,* ut supra, p. 68.

(8) Median Rents, 1930,—Department of Commerce News Release of November 28, 1932, "Families by Value or Monthly Rental of Home for Cities of 100,000 or More."

(9) Catholicity, 1926,—Catholics,—*Religious Bodies*: 1926, Vol I, Table 31, pp. 360-570.

For indices (5), (6), and (9), total population as in (1).

*Omitted are: St. Louis, Kansas City (Mo.), New Orleans, Portland. The last named probably did not have 300,000 inhabitants in 1926.

2. *The First State Study**

(1) General Fertility Rate—Live Births 1931—*World Almanac and Book of Facts,* 1933, p. 362.

—Women (15-45)—*Composition and Characteristics of the Population,* 15th Census, pp. 39-47.

(2) % Urban,—*Composition and Characteristics of the Population,* p. 29.

(3) % Negroes,—ibid., p. 28.

(4) % Foreign-Born,—ibid., p. 28.

(5) % Natives of Foreign or Mixed Parentage,—ibid., p. 28.

(6) Education, total percentage of persons (18-20) attending school in 1920 and in 1930,—ibid., p. 50.

(7) % Married Women Employed (15+),—*The World Almanac and Book of Facts,* 1933, p. 360.

(8) % Women (15+) Married,—*Composition and Characteristics of the Population,* p. 52.

(9) % Women (10+) Employed,—ibid., p. 56.

(10) % Catholic—Catholics.
—for 35 states, quoted from totals given in *Catholic Directory,* 1931.
—for 11 states, where diocesan and state lines do not correspond, calculated from *Religious Census,* 1926, section entitled *Roman Catholic Church,* 1929, p. 7, and the total population from *Birth, Stillbirth and Infant Mortality Statistics*: 1926, Part I, pp. 7-11. The percentages thus obtained were projected to 1930 by the same ratios of change as the above 35 states possessed during the same period.
—total population,—*Composition and Characteristics of the Population,* p. 29.

*Omitted are: District of Columbia, South Dakota and Texas.

3. *The Second City Study* (100,000 and over)*

(1) General Fertility Rate, based on average of 1930 and 1931 births.
Births—
—*Births, Stillbirth and Infant Mortality Statistics*: 1930, 1933, pp. 56-57.
—*Birth, Stillbirth and Infant Mortality Statistics*: 1931, 1934, pp. 58-60.
Women (15-44 incl.),—calculated from *Population,* 15th Census, Vol. II, 1933, pp. 724 et seq.

(2) % Women (10 and over) Employed.—*Composition and Characteristics of the Population,* 1931, p. 61.

(3) % Women (15 and over) Married.—ibid., p. 70.

(4) % Women Foreign-born,—calculated from *Population,* 15th Census, Vol. II, 1933, pp. 116 et sq.

(5) % of Male Workers in Low-fertility occupations, i.e., in "Trade", "Public Service", "Professional Service" and "Clerical Occupations".—calculated from *Population,* 15th Census, Vol. VI, 1933, pp. 22 et sq.

(6) % Women Negro,—calculated from *Population,* 15th Census, Vol. II, 1933, pp. 116 et sq.

(7) *Median Rent—Population,* 15th Census, Vol. VI, 1933, p. 61.

(8) % Catholicity in total population.
Catholics,—*Religious Bodies*: 1926, 1930, Vol. II, Table 31, Total Population—*Composition and Characteristics of the Population*, 1931, p. 61.

4. *The Second State Study**

(1) Modified general fertility rate
Births—
—*Birth, Stillbirth and Infant Mortality Statistics*: 1931, 1934, pp. 49-58. These birth figures were corrected as has been explained in the text in line with the findings of Thompson and Whelpton's *Population Trends in the United States*, 1933, p. 266, n.
—women (15-44 incl.),—calculated from *Population*, 15th Census, Vol. II, pp. 611-659.

Urbanization.

(2) Women (15-44 incl.) in cities of 100,000 and over, divided by the total women (15-44 incl.).
—women (15-44 incl.) in cities of 100,000 and over, calculated:
—women (15-44 incl.) in cities of 100,000-500,000, *Population*, 15th Census, Vol. II, 1933, pp. 751-795.
—women (15-44 incl.) in cities of 500,000 and over,—ibid. pp. 725-741.
—total women (15-44 incl.),—ut supra.

(3) Women (15-44 incl.) in cities of 50,000-100,000, divided by the total women (15-44 incl.).
—women (15-44 incl.) in cities of 50,000-100,000,—*Population*, 15th Census, Vol. II, 1933, pp. 751-795.
—total women (15-44 incl.)—ut supra.

(4) Rural non-farm women (15-44 incl.), divided by total women (15-44).
—rural non-farm women (15-44 incl.),—*Population*, 15th Census, Vol. II, 1933, pp. 694-717.
total women (15-44 incl.),—ut supra.

Foreign-born

(5) Foreign-born women (15-44 incl.), divided by total women (15-44 incl.).
foreign-born women (15-44 incl.),—*Population*, 15th Census, Vol. II, 1933, pp. 611-659.
—total women (15-44 incl.),—ut supra.

Occupational Differences

(6) Total of males (15-54 incl.) and females (15-44 incl.) engaged in Agriculture and Extraction of Minerals, divided by the total males (15-54 incl.) and females (15-44 incl.).
—males and females as above in respective occupations, calculated:
—total workers (10 and over) in the occupations,—*Population*, 15th Census, Vol. IV, 1933, pp. 611-659.

—from this total we subtract the total number of children (10-14 incl.) in the respective occupations, calculated *Population,* 15th Census, Vol. V, 1933, p. 387.

—women (45 and over) and men (55 and over) in the respective occupations—calculated, *Population,* 15th Census, Vol. IV, Table XI.

—total males (15-54 incl.) and females (15-44 incl.),—calculated, *Population,* 15th Census, Vol. II, 1933, pp. 611-659.

(7) Total males (15-54 incl.) and females (15-44 incl.) engaged in Trade, Public Service, Professional Service, and Clerical Occupations, divided by the total males (15-54 incl.) and females (15-44 incl.),—calculated as in preceding index.

Women Employed (this index does not appear in the final net correlations).

(8) Percentage of Home-Makers Employed outside the Home.
—index calculated directly from data given in *Population,* 15th Census, Vol. VI, 1933, pp. 50-51.

Women Married

(9) Married women (15-34 incl.) to total women (15-34 incl.)
—married women (15-34 incl.)—calculated from data given in Population, 15th Census, Vol. VI, 1933, pp. 864-912. The percentages for 5-year groups were totaled to give the final index.

Catholicity

(10) Percentage of Catholics in total population
—Catholics,—number calculated thus:
—for 35 states, totals taken from the *Catholic Directory*: 1931, tables given as appendix.
—for the other states, where diocesan and state lines do not correspond.
1) number of Catholics in these states as of 1926,—*Religious Census*: 1926, Section entitled *Roman Catholic Church.*
2) total population, 1926, as given in *Birth, Stillbirth, and Infant Mortality Statistics*: 1926, 1928, Part I, pp. 7-11. These figures were corrected where necessary, in the light of the results of the 1930 Census, data from Population Bulletin: *United States Summary, Composition and Characteristics of the Population,* 1931, p. 24.
3) percentage of Catholics thus obtained as of 1926.
4) on the assumption that the remaining states changed as did the above 35 in the period 1926-1930, the percentages of Catholics in 1930 was then calculated.
—total population,—from the 15th Census Bulletin, *Composition and Characteristics of the Population,* 1931, p. 29.

*Omitted are: Chattanooga, Dallas, Detroit, El Paso, Flint, Fort Worth, Gary, Houston, Long Beach, Los Angeles, Memphis, Miami, Oklahoma City, San Antonio, San Diego, Tulsa, Wichita.

B. GERMAN STUDIES

1. *The German City Study*

(1) General Fertility Rate (1934)
births,—total 1934 births (live and still),—*Stat. Jahr*: 1935, p. 58 women (16-44 incl.) at June 16, 1933,—calculated, 451. 2/131-177.

(2) Women (15-39 incl.) Single, at December 31, 1933—total of percentages, by 5-year groups of women single, calculated, 451.2/127-130.

(3) Men engaged in low-fertility occupations, i.e. total males engaged as:
independents in commerce (s/4)
independents in liberal professions, etc. (s/5)
officials, except land (b/2,3,4,5)
trained workers, except land (a/2,3,4,5)
The denominator of the index is the number of women (16-44 incl.), ut. supra.

(4) Women engaged in low-fertility occupations, i.e. total females engaged as all non-land women employed (s,m,l,b,a,h/2,3,4,5). The denominator of the index is the number of women (16-44 incl.), ut supra.

(5) % Gainers unemployed (males) calculated, 457.1,2,3: Table A.

(6) Catholic Women, i.e. ratio between total Catholic women and women (16-44 incl.). Catholic women,—451.3/41-43. Women (16-44 incl.), ut supra.

2. *The German State Study*

Birth Rate

(1) General Fertility Rate $\frac{\text{Total births}}{\text{Women (15-45)}}$

Live births (October 1-December 31, 1933)—495.2/55
Live births (January 1-September 30, 1934)—495.2/119
Still births (October 1-December 31, 1933)—495.2/56
Still births (January 1-September 30, 1934)—495.2/120

Women (15-45)—451.2/80-95

Urban-Rural Differences

(2) Rural $\frac{\text{Total rural women multiplied by the ratio (for rural sections) between reproductive women and total women}}{\text{Women (15-45 incl.)}}$

Rural women—451.1/176-181

Ratio ——451.2/30-1; 451.2/36, 451.2/66
Women 15-45, ut supra

(3) Urban $\frac{\text{Urban women (16-44)}}{\text{Women (15-45)}}$

Urban women 451.2/131-177
Women 15-45, ut supra.

Marital Status

(4) Women single, i.e. $\sum \frac{(a)}{(b)}$, where a_1 = single women (15-19)
a_2 = single women (20-24)
a_3 = single women (25-29)
etc.
b_1 = total women (15-19)
b_2 = total women (20-24)
b_3 = total women (25-29)
b_4 = total women (30-34)
b_5 = total men (35-39)
b_6 = total men (40-44)

(a) and (b) — 451.2/80-95

Occupational differences—all indices have number of women (15-44 incl.) as denominator.

(5) Total men (16-60), as farmers and peasants (s/1)
—laborers in agriculture (1/1)

(6) Total men (16-60), as—independents in commerce (s/4)
—independents in liberal professions (s/5)
—officials, except land (b/2,3,4,5)
—trained workers, except land (a/2,3,4,5)

(7) Total women (16-50),—all married employees.

(8) Total women (16-50),—all employed outside agriculture (s,m,b,a,l,h/2,3,4,5,6)

Data for indices 5,6,7, and 8 are taken from volumes 454, 455, and 456; these volumes form a single elaborated report. Each item for the above indices must be traced through the three volumes, so that a brief quoting of the references to these volumes is impossible. For the four indices, the denominators are the same, being the number of women of reproductive ages (15-45 inclusively), ut supra.

Catholicity

(9) Catholic Women
Total women (15-45)
Catholic women, 451.3/36-40
Total women, 15-45 inclusively, ut supra.

VITA

Bernard Mulvaney was born on March 28, 1907, in Marion, Wisconsin, where he received his primary training. After graduation from Saint Viator Academy, Burbonnais, Illinois, in 1925, he became a member of the Clerics of Saint Viator. He entered Saint Viator College in 1926, obtaining the Bachelor of Arts degree in 1930. In 1934, after the completion of his seminary course in the Catholic University of America, he was ordained to the Catholic priesthood. Meanwhile he took graduate work at the University of Illinois and at the Catholic University, and also in 1934 he was granted the Master of Arts degree in Sociology by the latter institution. During the academic year 1934-1935, he taught at Saint Viator College, and during 1935-1936, he was Dean of Studies. In 1936, he matriculated at the University of Louvain in Belgium, where in 1938, he received the Licentiate in Political and Social Sciences. Since then he has been doing doctoral work at the Universities of Louvain and Illinois.